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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/737,122 | 12/17/2003 | Koji Morita | 90606.1 | 5990 |
| 54071 | 7590 | 12/16/2005 | EXAMINER | |
| YAMAHA HATSUDOKI KABUSHIKI KAISHA C/O KEATING & BENNETT, LLP 8180 GREENSBORO DRIVE SUITE 850 MCLEAN, VA 22102 | | | CLARK, SHEILA V | |
| | | ART UNIT | | PAPER NUMBER |
| | | 2823 | | |
| DATE MAILED: 12/16/2005 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/737,122 | MORITA ET AL | |
| | Examiner | Art Unit | |
| | S. V. Clark | 2823 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 12 April 2005.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-21 is/are pending in the application.
 4a) Of the above claim(s) 14, 15, 16-17 is/are withdrawn from consideration.
 5) Claim(s) 1-13 is/are allowed.
 6) Claim(s) 18 and 20 is/are rejected.
 7) Claim(s) 19, 21 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 18, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai et al (5, 291, 065).

Arai et al shows in figure 3 an electronic substrate having a plurality of chips where the substrate comprises a first conductive member 310 comprising 310C which is electrically connected to one of the chips 4, a second conductive member 330 which is electrically connected to another one of the chips via 5G and emitter electrode. Though said first conductive member is shown as a portion of three parts, since said parts are formed on the same plane and of the same layer said parts one skilled in this art would obviously consider said parts as one layer or a first conductive member.

An insulating layer 320 shown electrically isolating the second conductive member from the first. A conductive base 340 is shown supporting the insulating layer, chips and second conductive member.

A patterned conductive film 330 is provide on the insulating layer and which functions as a second conductive member or conductive plate and is shown large enough to mount at least one of the chips 5. Said plate is shown supported on conductive base 340 and covering at least a portion of first conductive member 310.

Though the insulating sheet of Arai et al is formed of ceramic, insulating materials are often substituted one for another using such conventional materials as

epoxy and polyimide. It would have been therefore obvious to substitute the ceramic material for epoxy or polyimide to provide modified mechanical and thermal stability.

Copper plate 2 is shown on the back surface of said base and since copper is a heat sink material.

Claims 18, 20 are rejected.

Claims 10, 21 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1-13 are considered obvious over the prior art cited of record.

Applicant's arguments filed 9-29-05 have been fully considered but they are not persuasive. The reference to Arai et al is deemed to continue to teach the features of the invention. The layers recited as substantially shown and Arai et al has a provision for a separate conductive plate 340. Contrary to applicant's assertions Arai et al does show reference number 330 covering reference number which is the first conductive member 310 comprising 310E. Conductive plate 310 is shown comprising at least three portions.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Applicant's election without traverse of group 1, claims 1-13, 18-21 in the reply filed on 45-12-05 is acknowledged. Any inquiry concerning this communication should be directed to S. V. Clark at telephone number (571) 272-1725.



S. V. Clark
Primary Examiner
Art Unit 2823

December 09, 2005